

D301 – GPS Masterclock Controller

www.polarisclocks.com

01.01.25



POLARIS CLOCKS

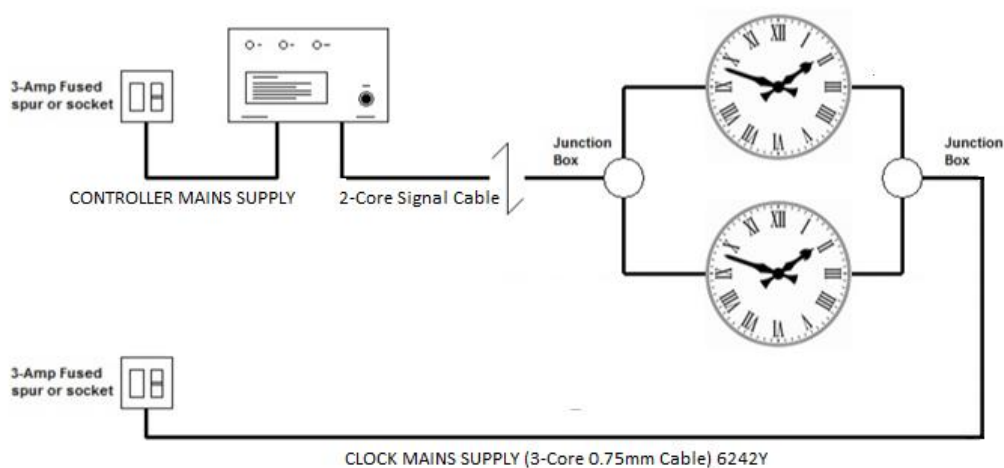
The GPS Masterclock Controller maintains and corrects the time on our mains driven impulse motors, the controller constantly updates the time from the GPS satellite system and keeps the clock accurate. Following power failures and daylight saving (DST) changes, the controller will fast advance the clocks to the correct time. This unit is suitable for public clocks where the time accuracy is important. For example in Railway stations, airports and transport terminals. The unit can control multiple clocks and works worldwide.



The unit is supplied in a wall mounted case featuring a protective cover for the control panel. It has dedicated connectors for Mains INPUT and Clock OUTPUT, as well as a connection for the GPS Antennae which is supplied with the unit. The unit and clocks are supplied to operate from a 220-240v 50Hz supply unless stated otherwise.

Depending on the country the controller will be supplied with a suitable mains lead and plug with a 3-Amp fuse. Alternatively the unit can be connected to a fused 3-Amp spur or circuit breaker. The output can then be connected to up to 4 clocks using a suitable junction box. The wiring diagram is shown below for our own motors which feature optical sensors. For third party motors the signal cable is replaced with a 4 core cable which provides a bi-polar (switching live) output to the clock motor.

WIRING DIAGRAM



To contact us with any questions or assistance:

Email: info@polarisclocks.com Website: www.polarisclocks.com / www.turm-uhren.com

INSTALLATION & SET UP:

If the clocks have been supplied new, then the hands will normally be positioned at 12o'clock. If fitting the hands yourself to a new motor, they should be fitted at 12o'clock making sure that the bosses and screws on the fixings do not touch each other. **DO NOT ATTEMPT TO TURN THE CLOCK HANDS ONCE SECURED.** This will damage the motor and invalidate the guarantee.

1. Mount the GPS unit on the wall using the hanging hole on the back of the unit. Remove the grey lower panel from the unit and secure with two more screws as shown in the images below. Position in a dry location away from other electrical devices or fluorescent lighting. **DO NOT REMOVE THE WHITE PANEL.**



2. Connect the mains input (BLUE PLUG) to a 3-Amp fused spur or plug,.
3. Connect the output (SIGNAL CABLE with GREY PLUG) to up to four clocks, using a suitable junction box if there are multiple clocks.
4. Connect the mains cables from each clock to a permanent mains supply, using a suitable junction box if there are multiple clocks.
5. Connect the GPS antennae to the gold screw connection on the GPS controller. Position the antenna with the "Pulse" writing facing the sky.
6. Switch the mains power on. The following lights will come on

GREEN – Mains Power

YELLOW – This will light will come on once the unit has received a GPS signal

RED – This will change from ON to OFF each minute.

To contact us with any questions or assistance:

Email: info@polarisclocks.com Website: www.polarisclocks.com / www.turm-uhren.com



SETTING THE SYSTEM TIME:

- Turn on the power supply to the clock and the controller
- The display will show “CLOCK TOWER PEOPLE” and the software version number for a few seconds and then show the date (which will be incorrect)
- Wait for the unit to get a GPS satellite signal. When it does the yellow GPS light will come on and the unit will now show the correct date and time defaulted to GMT (London).
- Turn the keyswitch from Lock to “SET” – the unit will now show the menu.
- Press the down arrow until you get to “Time Zone Offset” – Press OK and use the UP/DOWN arrow key to ensure this value is 0 (zero) for the UK/GMT or the appropriate value for your country.
- Now press the UP/DOWN buttons to scroll to “DAYLIGHT SAVING” and use the LEFT/RIGHT buttons to set this to [ON or OFF] depending if your country observes seasonal time changes.
- Turn the Keyswitch to “LOCK” and check the display now shows your local time and date

SETTING THE OUTSIDE CLOCK:

- Turn the key switch back to the “SET” position. (Note: When entering the menu, the clock will stop but it will adjust itself automatically back to the correct time when you exit the menu by turning the keyswitch back to “LOCK”)
- Now press the UP/DOWN buttons to scroll to “SET CLOCK TIME” and use the LEFT/RIGHT buttons to select Hours or Minutes and the UP/DOWN arrows to change the values to the time showing on the external outdoor clock (This should be the 12:00 – the time the hands have been fitted to the outdoor clock).
- Press OK
- Turn the Keyswitch back to “LOCK”
- The unit will now move the hands on the outdoor clock to the correct time. It will do this in two different ways - It will either fast advance the hands to the correct time, or if it is quicker to wait, it will wait for a period of time before starting to move the hands at normal speed. For instance, if it is 11:30 it will wait for 30 minutes and then start the clock.

To contact us with any questions or assistance:

Email: info@polarisclocks.com Website: www.polarisclocks.com / www.turm-uhren.com

FAULT DIAGNOSIS:

Once the initial set up has been completed, there should be no requirement to make any adjustments.

Clocks Have Stopped - Green Light is OFF.	Check the fuse in the plug or the circuit breaker.
Clocks Have Stopped - Red light is flashing once every minute.	The unit is providing a normal 1 minute impulse to the clock motor but the motor is not responding. Check the motor power supply and fuse. Check the cable between the controller and the motor is not damaged. The motor may have become jammed or ice/snow may have caused the motor to lock out (it has a thermal protector for the motor). Turn the power supply off for 30 seconds and switch back on.
Clocks have stopped – RED light is flashing once every every 4 seconds.	The unit is providing a fast impulse to the clock motor to adjust the time, but the motor is not responding. Check the motor power supply and fuse. Check the cable between the controller and the motor is not damaged. The motor may have become jammed or ice/snow may have caused the motor to lock out (it has a thermal protector for the motor). Turn the power supply off for 30 seconds and switch back on.
Clocks do not adjust after a power failure or seasonal time change.	Check the yellow GPS light is ON Go into the menu by turning the keyswitch to SET. Go down to “Daylight Saving” and check this is set to {ON}. If the fault occurs again, please contact us.
Clocks are showing the incorrect time	Check the unit has a yellow GPS light showing. If the GPS light is on and the clock hands are moving but showing the wrong time, follow the earlier instructions for setting the time. If the fault occurs again, please contact us.
Everything above is OK but the clocks are still not working	There could be a fault with the clock motor or controller. Please contact us for further advice or refer to the motor datasheets.

To contact us with any questions or assistance:

Email: info@polarisclocks.com Website: www.polarisclocks.com / www.turm-uhren.com